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Aschersonia conica sp. nov. (*Clavicipitaceae*) from Hainan Province, China

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Abstract — *Aschersonia conica*, a new anamorphic species of the family *Clavicipitaceae*, is described and illustrated based on specimens collected in Hainan Province, China. The entomogenous fungus is characterized by conical, whitish to pale yellow stromata that are surrounded by a hypothallus and a wide base, wide ostiolar openings, cylindrical conidiogenous cells in a compact palisade, filiform sterile elements, and fusiform conidia.

Key words — morphology, taxonomy, new taxon

Introduction

Aschersonia Mont., a large genus in the family *Clavicipitaceae*, has been well studied, especially in America and Europe (Hywel-Jones & Evans 1993; Liu et al. 2005). Recently, new studies on *Aschersonia* and *Hypocrella* were carried out using both morphological and molecular techniques (Liu et al. 2006; Spatafora et al. 2007; Sung et al. 2007). Chaverri et al. (2008), who have provided the most extensive revision of *Aschersonia* since Petch (1921), accepted 32 species. They showed that *Aschersonia* is a form genus that shares similar anamorph morphologies with *Moelleriella* and *Hypocrella* but that both teleomorphic genera can be distinguished by their ascospore disarticulation and conidial shape and size. Mongkolsamrit et al. (2009) later published three additional species based on morphology combined with ITS and β-tubulin sequence analysis.

In China, Tzean et al. (1997) and Qiu et al. (2009, 2010) studied *Aschersonia* and its teleomorphic forms, *Hypocrella* Sacc., *Moelleriella* Bres., and *Samuelsia* P. Chaverri & K.T. Hodge. During a recent survey on insect pathogenic fungi in tropical forests in southern China, a previously unknown species of entomopathogenic *Aschersonia* was collected in the Jianfengling National Nature Reserve and is proposed here as a new species.

Materials & methods

Fungal measurements and microscopical observations followed Qiu et al. (2009, 2010). Spore range data exclude 5% of measurements from each end of the range, which are given in parentheses. Text abbreviations are as follows: CB = Cotton Blue, L = mean spore length (arithmetic average of all spores), W = mean spore width (arithmetic average of all spores), Q = variation in the L/W ratios among all specimens studied, n = number of spores measured from a given number of specimens. Conidiomata were carefully dissected with a razor blade and mounted in water or lactic acid mixed with cotton blue on a slide. Special color terms follow Kornerup & Wanscher (1967). Specimen vouchers are deposited at the Mycological Herbarium, Fujian Agricultural and Forestry University (MHFAFU).

Taxonomy

Aschersonia conica Jun Z. Qiu, Y.B. Su & C.S. Weng, **sp. nov.** Figs. 1

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Stromata pyriformia vel conico-pulvinata, valde convexa, ex hyphis densis composita, deorsum effusa, hypothallum membranaceum ad 1.8 mm diam. 0.5 mm altum dilute luteum formantia, in statu recenti albida, superficie aliquot orificiis ut punctis magnis visibilibus praedita. Pycnidia plerumque singula, in medio stromatis immersa, 252–306 µm alta, 103–141 µm diam., elongate ampulliformia. Phialides cylindricae, ad 15 µm longae. Paraphyses praesentes, filiformes, flexuosae, ad 116 µm longae, 0.7 µm latae. Conidia fusoidea, utrinque acutata, 8.2–10.5 × 0.9–1.3 µm.

Type — China, Hainan Prov., Dongfang County, Jianfengling National Nature Reserve, alt. 1450 m, on *Aleyrodidae*, 29.X.2008, J.Z. Qiu, Y.B. Su & C.S. Weng 311 (**Holotype**, MHFAFU 20811).

Etymology — Refers to the conical stroma of this species.

Teleomorph: Unknown.

Stromata—Pyriform, conical-pulvinate, markedly convex, consisting of dense hyphae, base spreading, forming a pale yellow membranous hypothallus up to 1.8 mm diam., 0.5 mm high, whitish-coloured when fresh, several ostiolar openings as large dots visible on the surface.

Pycnidia—Usually single, embedded in the centre of the stroma, CB–, 252–306 µm high, 103–141 µm diam, elongate flask-shaped. Conidiogenous cells phialidic, cylindrical, up to 15 µm long.

Paraphyses—Present, linear, filiform, flexuous, up to 116 µm long, 0.7 µm wide.

Conidia—Fusoid, sometimes narrowly fusiform, with acute ends, 8.2–10.5 × 0.9–1.3 µm, L = 9.5 µm, W = 1.1µm, Q = 8.6–8.7 (n = 60/2).

Additional specimen examined — **China**. **Hainan Prov.**: Ledong County, Jianfengling National Nature Reserve, alt. 1350 m, on *Aleyrodidae*, 30.X.2008, J.Z. Qiu, Y.B. Su & C.S. Weng 358 (MHFAFU 20828).

Comments—*Aschersonia conica* is characterized by the whitish to pale yellow markedly convex conical stromata, long conidia, wide ostiolar openings, and

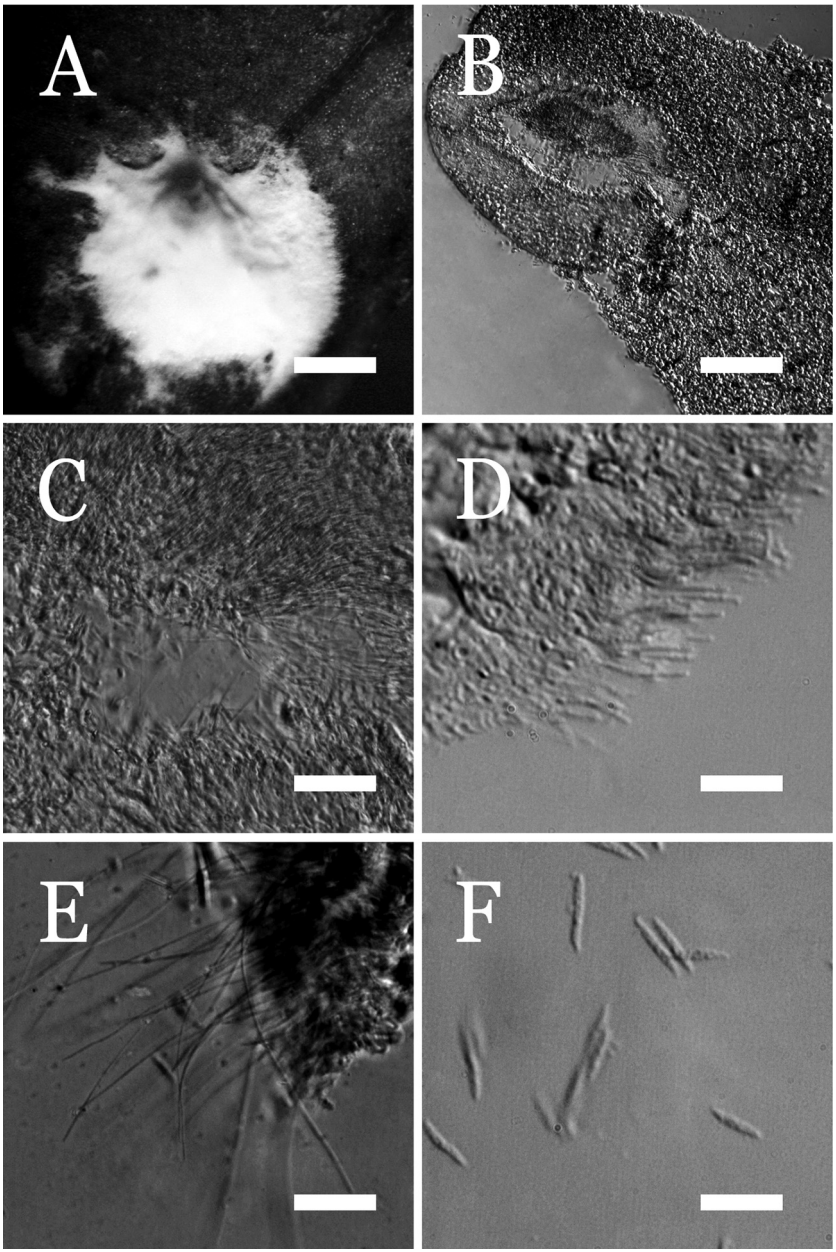

Figure 1. *Aschersonia conica*. A: Stroma; B: Pycnidium; C: Horizontal-section of a flask-shaped pycnidium; D: Conidiophores and conidiogenous cells; E: Paraphyses; F: Conidia. Scale bars: A = 1 mm; B–C = 100 μm; D–E = 30 μm; F = 10 μm.

presence of paraphyses and hypothallus. Two previously described species, *A. turbinata* Berk. and *A. juruensis* Henn. (Petch 1921, Chaverri et al. 2008), also have similarly shaped stromata. However, *A. turbinata* differs in having ovoid conidia that are longer and wider (10.5–11.2 × 4.5–5.0 µm), producing copious slime, and lacking paraphyses. *Aschersonia juruensis* differs in pulvinate stromata with sloping sides (convex), more conidiomata per stroma (>20), longer wider conidia (14.5–15.5 × 3.7–4.0 µm) that are ventricose with acute ends, and the absence of paraphyses.

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